# Cost Estimate for Rainy Mine Alternative 2 - Excavation and Off–Site Disposal

	Unit	Description	Unit Cost	Cost	Comment
RAINY MI	NE - A	LTERNATIVE 2: EXCAVATION AND OFF-SITE DISPOSAL			
ACCESS RO	DAD IMI	PROVEMENT			
1	ls	Access Road (FR 5640) Improvement	\$5,000.00	\$5,000.00	Estimate based on minor improvements to FR 5640
		Access Road Improvement Subtotal =	_	\$5,000.00	
		·			
PHYSICAL I	HAZARI	DS MITIGATION:			
		Bat Gate Installation			
1	ea	Bat gate, installed at open adit	\$5,500.00	\$5,500.00	
		Bat Gate Installation Subtotal =	_	\$5,500.00	
		Debris Removal			
20	су	Load miscellaneous debris and litter, 1cy backhoe	\$3.32	\$66.44	
1	LS	Collect miscellaneous debris and litter including mobilization	\$5,000.00	\$5,000.00	Based on crew of 6 employees with no overnight stay
6	hr	Haul mill debris to sanitary landfull, 12cy dump, 120mi r.t.	\$81.62	\$489.69	Assumes 3 hours per truckload
		Debris Removal Subtotal =		\$5,556.13	
MINE WAST	E DEM	OVAL			
WINE WAS	E KEIVI	Construction of Access Road			
100	ea	Clear trees, brush, and downfall	\$19.27	\$1,926.98	Rough approximation
2000	су	Cut and widen road	\$6.68	\$13,354.22	Assumes riprable rock and soil, push with dozer, no hauling
1	ls	Install temporary bridge, 100-ft span	\$70,000.00	\$70,000.00	Bailey Bridges, Alabama, verbal estimate
800	lf	Benching	\$1.43	\$1,147.80	,g, ·, ·
230	sy	Compact and grade	\$4.85	\$1,114.36	
300	сy	Haul and spread 3in layer of gravel road base	\$64.96	\$19,488.33	Inc off-site material cost and delivery, handling, and spreading
	•	Access Road Construction Subtotal =	_	\$107,031.68	
		Mine Waste Excavation and Disposal			
0.4	ac	Clear trees/brush from waste rock piles	\$1,018.81	\$419.98	Rough approximation
2000	су	Excavate/load waste rock from main area (WR-1); 1cy backhoe	\$3.68	\$7,350.34	Assumes no stockpiling at site
25	sy	Demolish concrete foundation	\$182.60	\$4,564.99	Assumes 7 to 24inch reinforced concrete
25	су	Excavate/load contaminated soil/concrete from around mill foundation; 1cy backhoe	\$3.68	\$91.88	
100	су	Excavate/load contaminated sediment from two seeps; 1cy backhoe	\$3.68	\$367.52	
150	су	Backfill open shaft	\$5.51	\$826.91	
25	су	Excavate waste rock from west zone (WR-2); 1cy backhoe	\$3.68	\$91.88 \$10,683.37	
2000 2000	су	Transport waste rock to staging area, 12cy dump, 3 mi r.t.  Load waste rock from staging area for transport to landfill, 2.25cy FE loader	\$5.34 \$1.28	\$2,560.48	
133	cy bins	Transport debris to landfill rail station for disposal, 60 miles, 15cy bulk waste	\$1,200.00	\$160,000.00	Rabanco bulk bin, 25 ton (~15 cy) capacity, \$1200 per bin for haulage and rail fee
3	wk	XRF rental	\$2,530.00	\$7,590.00	Ashtead Technology Rentals +10%
6	ea	Confirmation samples (selected metals)	\$120.00	\$720.00	4 from main area and 2 from west zone; SVL
· ·		Mine Waste Excavation and Disposal Subtotal =	Ų.120.00	\$195,267.35	1 110111 1114111 4104 4114 2 110111 11000 20110, 0 V 2
				· · · · · · ·	
		Mine Waste Area Reclamation (includes mill foundation footprint)			
130	су	Purchase topsoil from off-site source	\$23.18	\$3,012.98	Assumes grading performed as part of removal
130	су	Haul topsoil to staging area, 50 mi haul	\$33.11	\$4,304.25	
130	су	Load and haul stockpiled soil into truck, 2.25cy FE loader, 12 cy dump, 5 mi	\$6.35	\$824.98	
130	су	Place 6 to 12" soil cover over excavated waste areas, FE loader	\$4.90	\$637.03	
1	ls	Reclaim seep areas	\$4,000.00	\$4,000.00	Mimic natural channel to Quartz Creek
20	msf	Fertilizer, 800/lb/ac	\$18.63	\$372.59	
20	msf	Seeding, slope mix, 6lb/MSF, push spreader	\$91.05	\$1,821.03	Means+50% for USFS seed mix
20	msf	Seeding, wildflowers, 0.6lb/MSF, push spreader	\$74.50	\$1,489.93	Means+50% for USFS seed mix
0.4	ac	Hydromulching, wood cellulose	\$2,207.31	\$882.92	
1	ls	Plant tree seedlings in main area	\$1,000.00	\$1,000.00	Estimate
0.4	ac	Place wood slash back over areas	\$763.73	\$305.49	
		Mine Waste Area Reclamation Subtotal =		\$18,651.21	

# Cost Estimate for Rainy Mine Alternative 2 - Excavation and Off–Site Disposal

Qty	Unit	Description	Unit Cost	Cost	Comment
		Access Road Reclamation			
1	day	Ripped compacted surface	\$1,184.22	\$1,184.22	Assumed duration
3	day	Grade to blend with surrounding topography	\$1,184.22	\$3,552.66	Assumed duration
1	Is	Disassemble temporary bridge	\$10,000.00	\$10,000.00	
1	ls	Install safety barrier and warning signs	\$2,000.00	\$2,000.00	Rock barrier to prevent vehicular and ATV access
40	msf	Fertilizer, 800/lb/ac	\$18.63	\$745.19	
40	msf	Seeding, slope mix, 6lb/MSF, push spreader	\$91.05	\$3,642.06	Means+50% for USFS seed mix
40	msf	Seeding, wildflowers, 0.6lb/MSF, push spreader	\$74.50	\$2,979.87	Means+50% for USFS seed mix
1	ac	Hydromulching, wood cellulose	\$2,207.31	\$2,207.31	
1	ac	Place wood slash back over areas	\$763.73	\$763.73	
		Access Road Reclamati	ion Subtotal =	\$27,075.03	
		Miscellaneous			
1	ls	Staging area prep	\$2,000.00	\$2,000.00	
1	ls	Mobilization	\$20,000.00	\$20,000.00	
1	ls	Temporary erosion control BMPs	\$5,000.00	\$5,000.00	
-		• •	ous Subtotal =	\$27,000.00	
				<b>42.</b> ,000.00	
		Post-removal Monitoring (3 year total)			Assumes 3 years of monitoring, 6 events, 3 aquatic sampling locations, limited analysis
1	ls	Biannual monitoring of aquatic habitat, 6 events total, annual reports	\$49,472.00	\$49,472.00	no baseline or pre-removal survey or sampling
		Post-removal Monitori	ng Subtotal =	\$49,472.00	
SUMMAR	Υ				
Johnnard	•	Access Road Improvement Subtotal =		\$5,000	
		Bat Gate Installation Subtotal =		\$5,500	
		Debris Removal Subtotal =		\$5,556	
		Access Road Construction Subtotal =		\$107,032	
		Mine Waste Excavation and Disposal Subtotal =		\$195,267	
		Mine Waste Area Reclamation Subtotal =		\$18,651	
		Access Road Reclamation Subtotal =		\$27,075	
		Miscellaneous Subtotal =		\$27,000	
		Removal	Action Total =	\$391,081	
		Design =		\$39,108	Design minimal because hauling waste off site, assumed 10% of removal action total
		Removal Action Oversight =		\$40,000	Assumes 20-day construction period
		Post-removal Monitoring Subtotal =		\$49,472	,
		· · · <b>y</b> · · · · · ·	Subtotal =	\$519,662	
		Contingency 20%		\$103,932	
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Qty	Unit	Description	Unit Cost	Cost	Comment
RAINY MI	NE - Al	LTERNATIVE 3A: EXCAVATION AND ON-SITE DISPOSAL, RIDGE	REPOSITOR	Y LOCATION (	OPTION 1)
CCESS RO	OAD IMP	PROVEMENT		·	
1	ls	Access Road (FR 5640) Improvement	\$5,000.00	\$5,000.00	Estimate based on minor improvements to FR 5640
		Access Road Improvement Subtotal =		\$5,000.00	
HYSICAL	HAZARD	OS MITIGATION:			
		Bat Gate Installation			
1	ea	Bat gate, installed at open adit	\$5,500.00	\$5,500.00	
		Bat Gate Installation Subtotal =		\$5,500.00	
		Debris Removal			
1	ls	Collect miscellaneous debris and litter including mobillization	\$5,000.00	\$5,000.00	Based on crew of 6 employees with no overnight stay
20	су	Load miscellaneous debris and litter, 1cy backhoe	\$3.32	\$66.44	Assumes equivalent to 1 truckload
6	hr	Haul mill debris to sanitary landfull, 12cy dump, 120mi r.t.	\$81.62	\$489.69	Assumes 3 hours per truckload
		Debris Removal Subtotal =	_	\$5,556.13	'
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IINE WAST	TE REMO				
		Access Road Construction			
100	ea	Clear trees, brush and downfall	\$19.27	\$1,926.98	Rough approximation
2000	cy	Cut and widen road	\$6.68	\$13,354.22	Assumes riprable rock and soil, push with dozer, no hauling
1	ls	Install temporary bridge, 100-ft span	\$70,000.00	\$70,000.00	Bailey Bridges, Alabama, verbal estimate
800	lf	Benching	\$1.43	\$1,147.80	
230	sy	Compact and grade	\$4.85	\$1,114.36	
300	су	Haul and spread 3in layer of gravel road base	\$64.96	\$19,488.33	Inc off-site material cost and delivery, handling, and spreading
		Access Road Construction Subtotal =		\$107,031.68	
		Mine Waste Excavation and Disposal			
0.4	ac	Clear trees/brush from waste rock piles	\$1,018.81	\$420.99	Rough approximation
2000	су	Excavate waste rock from main area (WR-1); 1cy backhoe	\$3.68	\$7,350.34	Assumes no haulage
25	sy	Demolish concrete foundation	\$182.60	\$4,564.99	Assumes 7 to 24inch reinforced concrete
25	су	Excavate contaminated soil/concrete from around mill foundation; 1cy backhoe	\$3.68	\$91.88	
100	су	Excavate contaminated sediment from two seeps; 1cy backhoe	\$3.68	\$367.52	
150	су	Backfill open shaft	\$5.51	\$826.91	
25	су	Excavate waste rock from west zone (WR-2); 1cy backhoe	\$3.68	\$91.88	
2000	су	Transport waste rock to repository,12cy dump, 2 mi rt	\$4.83	\$9,668.01	
16	hr	Screen waste material and stockpile fines for repository cover	\$389.40	\$6,230.44	On-site screening plant, 125 ton/hr
2000	су	Compact waste material	\$1.16	\$2,317.67	Spread and compact, sheepsfoot, 8-inch lifts
3	wk	XRF rental	\$2,530.00	\$7,590.00	Ashtead Technology Rentals +10%
6	ea	Confirmation samples (selected metals)	\$120.00	\$720.00	4 from main area and 2 from west zone; SVL
		Mine Waste Excavation and Disposal Subtotal =		\$40,240.63	

Qty	Unit	Description	Unit Cost	Cost	Comment
•		Repository Construction - Option 1 Engineered Cover:			
0.3	ac	Clear and grub repository footprint	\$7,057.87	\$2,117.36	
2760	су	Excavate and stockpile topsoil, 300hp dozer, 150ft push	\$2.28	\$6,305.40	
500	cy	Compact bottom of repository, 6" lift, sheepsfoot	\$1.16	\$579.42	
500	cy	Place and compact screened fines from waste material	\$5.08	\$2,538.40	
1500	sy	Install GCL	\$1.69	\$2,532.89	Assumes 20% extra for periphery
250	-	Purchase clean drain material from off-site source	\$8.72	\$2,179.72	Assumes 20 /0 extra for periphery
	су	Haul drain material to staging area, 100 mi	\$33.11	\$8,277.41	
250	су				
250	су	Load stockpiled drain material into truck, 2.25cy FE loader	\$1.28	\$320.06	
250	су	Haul stockpiled drain material, 12cy dump, 1mi r.t.	\$4.33	\$1,081.58	
250	су	Place 6 in layer of drain material over GCL	\$3.80	\$949.14	
1500	sy	Install filter fabric over drain material	\$1.38	\$2,069.35	Assumes 20% extra to blend
1000	су	Place and compact 24" soil cover in 8-inch lifts	\$3.80	\$3,796.57	
14	msf	Fertilizer, 800/lb/ac	\$18.63	\$252.71	
14	msf	Seeding, slope mix, 6lb/MSF, push spreader	\$91.05	\$1,235.10	
14	msf	Seeding, wildflowers, 0.6lb/MSF, push spreader	\$74.50	\$1,010.53	
0.3	ac	Hydromulching, wood cellulose	\$2,207.31	\$687.37	
0.3	ac	Place wood slash back over cover	\$763.73	\$237.83	
		Repository Construction - Option 1 Engineered Cover Subtotal =		\$27,168.65	
		Repository Construction - Option 2 Earthen Clay Cover:			
0.3	ac	Clear and grub repository footprint	\$7,057.87	\$2,117.36	
1000	су	Excavate and stockpile topsoil, 300hp dozer, 150ft push	\$2.28	\$2,284.56	
500	су	Compact bottom of repository, 6" lift, sheepsfoot	\$1.16	\$579.42	
1500	sy	Install 12 in clay liner	\$18.61	\$27,911.42	Assumes 20% extra for periphery
250	су	Purchase clean drain material from off-site source	\$8.72	\$2,179.72	
250	су	Haul drain material to staging area, 50 rt	\$33.11	\$8,277.41	
250	су	Load stockpiled drain material into truck, 2.25cy FE loader	\$1.28	\$320.06	
250	су	Haul stockpiled drain material, 12cy dump, 1mi r.t.	\$4.33	\$1,081.58	
250	сy	Place 6 in layer of drain material over clay	\$3.80	\$949.14	
1500	sy	Install filter fabric over drain material	\$1.38	\$2,069.35	Assumes 20% extra to blend
1000	сy	Place and compact 24" soil cover in 8-inch lifts	\$3.80	\$3,796.57	
14	msf	Fertilizer, 800/lb/ac	\$18.63	\$252.71	
14	msf	Seeding, slope mix, 6lb/MSF, push spreader	\$91.05	\$1,235.10	
14	msf	Seeding, wildflowers, 0.6lb/MSF, push spreader	\$74.50	\$1,010.53	
0.3	ac	Hydromulching, wood cellulose	\$2,207.31	\$687.37	
0.3	ac	Place wood slash back over cover	\$763.73	\$237.83	
0.0	uo	Repository Construction - Option 2 Earthen Clay Cover Subtotal =	Ψ/ 00.70	\$50,008.78	
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		Mine Waste Area Reclamation			
130	су	Load stockpiled soil into truck, 2.25cy FE loader	\$1.28	\$166.43	Growth medium stockpiled at repository
130	сy	Haul stockpiled soil, 12cy dump, 3mi r.t.	\$5.34	\$694.42	• • •
130	су	Place 6 to 12" soil cover over excavated waste areas, FE loader	\$4.90	\$637.03	
1	ls	Reclaim seep areas	\$4,000.00	\$4,000.00	Mimic natural channel to Quartz Creek
20	msf	Fertilizer, 800/lb/ac	\$18.63	\$372.59	
20	msf	Seeding, slope mix, 6lb/MSF, push spreader	\$91.05	\$1,821.03	
20	msf	Seeding, wildflowers, 0.6lb/MSF, push spreader	\$74.50	\$1,489.93	
0.4	ac	Hydromulching, wood cellulose	\$2.207.31	\$882.92	
1	LS	Plant tree seedlings in main area	\$1,000.00	\$1,000.00	Estimate
0.4	ac	Place wood slash back over areas	\$763.73	\$305.49	Lounido
U. <del>1</del>	ac	Mine Waste Area Reclamation Subtotal =	Ψ. 00.73	\$11,369.85	
		wille Waste Area Recialitation Subtotal -		ψ11,303.03	

Qty	Unit	Description	Unit Cost	Cost	Comment
		Access Road Reclamation			
1	day	Ripped compacted surface	\$1,184.22	\$1,184.22	
10	day	Grade to blend with surrounding topography	\$1,184.22	\$11,842.21	
40	msf	Fertilizer, 800/lb/ac	\$18.63	\$745.19	
1	Is	Disassemble temporary bridge	\$10,000.00	\$10,000.00	
40	msf	Seeding, slope mix, 6lb/MSF, push spreader	\$91.05	\$3,642.06	
40	msf	Seeding, wildflowers, 0.6lb/MSF, push spreader	\$74.50	\$2,979.87	
1	ac	Hydromulching, wood cellulose	\$2,207.31	\$2,207.31	
1	ac	Place wood slash back over areas	\$763.73	\$763.73	
		Access Road Reclamation Subtotal =		\$33,364.58	
		Miscellaneous			
200	If	Install earthen diversion channel above repository	\$7.66	\$1,531.87	
600	lf	Install temporary fence around repository	\$2.95	\$1,768.05	
1	Is	Staging area prep	\$500.00	\$500.00	
1	Is	Mobilization	\$30,000.00	\$30,000.00	
1	Is	Temporary erosion control BMPs	\$4,000.00	\$4,000.00	
		Miscellaneous Subtotal =	_	\$37,799.93	
		Pos-removal Monitoring (3 year total)			Assumes 3 years of monitoring, 6 events, 3 aquatic sampling locations, limited analysis
1	Is	Biannual monitoring of aquatic habitat, 6 events total, annual reports	\$49,472.00	\$49,472.00	no baseline or pre-removal survey or sampling
•		Post-removal Monitoring Subtotal =		\$49,472.00	
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SUMMAR	Y				
		OPTION 1 - ENGINEERED COVER:			
		Access Road Improvement Subtotal =		\$5,000	
		Bat Gate Installation Subtotal =		\$5,500	
		Debris Removal Subtotal =		\$5,556	
		Access Road Construction Subtotal =		\$107,032	
		Mine Waste Excavation and Disposal Subtotal =		\$40,241	
		Repository Construction - Option 1 Engineered Cover Subtotal =		\$27,169	
		Mine Waste Area Reclamation Subtotal =		\$11,370	
		Access Road Reclamation Subtotal =		\$33,365	
		Miscellaneous Subtotal =	_	\$37,800	
		Removal Action Total =		\$273,031	Assumed 15% of removal action total
		Design = Removal Action Oversight =		\$40,955 \$60,000	Assumed 30-day construction period
		Post-removal Monitoring Subtotal =		\$60,000 \$49,472	Assumed 30-day construction period
		Subtotal =	_	\$423,458	
		Contingency 20%		\$ <b>423,458</b> \$84,692	
		Containg Circly 20 /0	_	Ψ04,092	
		OPTION 1 - ENGINEERED COVE	R TOTAL =	\$508,150	
		OF FIGURE CONTENTS			

Qty	Unit	Description l	Init Cost	Cost	Comment	
		OPTION 2 - EARTHEN CLAY COVER:				
		Access Road Improvement Subtotal =		\$5,000		
		Bat Gate Installation Subtotal =		\$5,500		
		Debris Removal Subtotal =		\$5,556		
		Access Road Construction Subtotal =		\$107,032		
		Mine Waste Excavation and Disposal Subtotal =		\$40,241		
		Repository Construction - Option 2 Earthen Clay Cover Subtotal =		\$50,009		
		Mine Waste Area Reclamation Subtotal =		\$11,370		
		Access Road Reclamation Subtotal =		\$33,365		
		Miscellaneous Subtotal =		\$37,800		
		Removal Action Total =	_	\$295,872		
		Design =		\$44,381	Assumed 15% of removal action total	
		Removal Action Oversight =		\$60,000		
					Assumed 30-day construction period	
		Post-removal Monitoring Subtotal =	_	\$49,472		
		Subtotal =		\$449,724		
		Contingency 20%	_	\$89,945		
		OPTION 2 - EARTHEN CLAY COVER	TOTAL =	\$539,669		

RAINY MI			Unit Cost	Cost	Comment			
	RAINY MINE - ALTERNATIVE 3B: EXCAVATION AND ON-SITE DISPOSAL, MILL SITE REPOSITORY LOCATION (OPTION 2)							
CCESS RC	OAD IMP	ROVEMENT						
1	ls	Access Road (FR 5640) Improvement	\$5,000.00	\$5,000.00	Estimate based on minor improvements to FR 5640			
		Access Road Improvement Subtotal =		\$5,000.00				
HYSICAL I	HAZARD	S MITIGATION:						
		Bat Gate Installation		25 500 00				
1	ea	Bat gate, installed at open adit	\$5,500.00	\$5,500.00				
		Bat Gate Installation Subtotal =		\$5,500.00				
		Debris Removal						
1	Is	Collect miscellaneous debris and litter including mobillization	\$5,000.00	\$5,000.00				
20	су	Load miscellaneous debris and litter, 1cy backhoe	\$3.32	\$66.44	Assumes equivalent to 1 truckload			
6	hr	Haul mill debris to sanitary landfull, 12cy dump, 120mi r.t.	\$81.62	\$489.69	Assumes 3 hours per truckload			
		Debris Removal Subtotal =	_	\$5,556.13				
IINE WAST	E REMO							
100		Access Road Construction Clear trees access route	\$19.27	¢4 000 00	Davida annoviruation			
2000	ea cy	Excavate and cut road	\$6.68	\$1,926.98 \$13,354.22	Rough approximation Assumes riprable rock and soil, push with dozer, no hauling			
2000	Is	Install temporary bridge, 100-ft span	\$70,000.00	\$70,000.00	Bailey Bridges, Alabama, verbal estimate			
800	lf	Benching	\$1.43	\$1,147.80	balley bridges, Alabana, verbal estimate			
230	sy	Compact and grade	\$4.85	\$1,114.36				
300	cy	Haul and spread 3in layer of gravel road base	\$64.96	\$19,488.33	Inc off-site material cost and delivery, handling, and spreading			
	-,	Access Road Construction Subtotal =	_	\$107,031.68	3,			
				•				
		Frecnh Drain Construction						
0.3	ac	Clear and grub repository footprint	\$7,057.87	\$2,394.74	Rough approximation			
820	су	Compact bottom of repository, 6" lift, sheepsfoot	\$0.46	\$380.10				
60 1500	су	Excavate french drain trench	\$3.68 \$1.38	\$220.51 \$2.069.35				
1500 430	sy ft	Install filter fabric over soil slope Install 6" perforated drain pipe	\$1.38 \$4.14	\$2,069.35 \$1,779.64				
500		Purchase clean drain material from off-site source	\$6.93	\$3,465.47				
500	cy cy	Haul drain material to staging area, 50 rt	\$33.11	\$16,554.81				
500	су	Load stockpiled drain material into truck, 2.25cy FE loader	\$1.28	\$640.12				
500	cy	Haul stockpiled drain material, 12cy dump, 3mi r.t.	\$5.34	\$2.670.84				
500	cy	Place drain rock	\$2.94	\$1,470.62				
1500	sy	Install HDPE liner over drain rock	\$14.10	\$21,157.05				
	•	French Drain Construction Subtotal =	_	\$52,803.26				

Mine Waste Excavation and Disposal   Section 19   Secti	Qty	Unit	Description	Unit Cost	Cost	Comment
Company   Comp			·			
	0.4	ac	•	\$1.018.81	\$420.99	Rough approximation
25   y   Demoksh concrete foundation   \$182.00   \$45,548   \$391.88   \$391.			·	. ,		
25   Or   Excavate contaminated soliconcrete from around mill foundation; toy backhoe   33.88   \$33.88   \$30.742   \$35.742   \$32.89   \$3						Assumes 7 to 24inch reinforced concrete
150   cy   Backfill open shaft   55.51   \$826.91						7.656.11.65 7
100   cy   Excavate contaminated additional from two seeps: 1cy backhoe   \$3.68   \$91.82						
25			·			
25						
16						
200   Communication   Section   Se			· · · · · · · · · · · · · · · · · · ·			On-site screening plant, 125 ton/hr
3 wk   XFF rental   \$2,530.00   \$7,590.00   \$7,590.00   \$40,481.23						On-site selecting plant, 125 tolimi
Repository Construction - Option 1 Engineered Cover:						Ashtead Technology Pentals +10%
Sepository Construction - Option tengineered Cover:				, ,		<b>0</b> ,
Repository Construction - Option 1 Engineered Cover:	U	Ca	· · · ·	Ψ120.00		4 Irom main area and 2 Irom secondary workings, 5VL
450   cy   Excavate and stockpile topsoil, 300th pdozer, 150ft push   \$2.2 is   \$2.3 is   \$2.9887.99     290   cy   Hulu topsoil to staging area, 50 rt   \$33.11   \$42,711.42     290   cy   Hulu stockpiled soil, 12cy dump, 3m i.t.   \$5.3   \$5.888.72     280   cy   Piace and compast screened fines from waste material     410   cy   Piace and compast screened fines from waste material     410   cy   Piace and compast screened fines from waste material     410   cy   Piace and compast screened fines from waste material     410   cy   Piace and compast screened fines from waste material     410   cy   Piace and compast screened fines from waste material     410   cy   Piace and compast screened fines from waste material     410   cy   Piace and compast screened fines from waste material     410   cy   Piace and compast screened into truck, 22 fety FE loader     410   cy   Piace and compast 24 sill cover in 8-inch lifts     410   cy   Piace and compast 24 sill cover in 8-inch lifts     410   cy   Piace and compast 24 sill cover in 8-inch lifts     410   cy   Piace and compast 24 sill cover in 8-inch lifts     420   cy   Piace and compast 24 sill cover in 8-inch lifts     430   cy   Piace and compast 24 sill cover in 8-inch lifts     450   cy   Piace and compast 24 sill cover in 8-inch lifts     450   cy   Piace and compast 24 sill cover in 8-inch lifts     450   cy   Piace wood slash back over cover     450   cy   Piace wood slash back over cover     450   cy   Piace wood slash back over cover     450   cy   Cy   Cy   Cy   Cy   Cy   Cy   Cy			milie waste Excavation and Disposal Subtotal -		\$40,46 I.23	
1290   Cy   Purchase topsoil from off-site source   \$23.18   \$29,807.99     Haul topsoil to Isaging area, 50 rt   \$33.11   \$32,711.42     1290   Cy   Load stockpiled soil into fuck, 2.25cy FE loader   \$1.28   \$1,651.51     1290   Cy   Haul stockpiled soil. 1272 dump, 3mi rt.   \$5.34   \$6,890.78     1630   CV   Purchase clean drain material tost going area, 50 rt   \$5.08   \$4,162.98     1631   CCL   Function material tost going area, 50 rt   \$1.69   \$3.10   \$3.11   \$3.574.95     1410   CV   Purchase clean drain material tost going area, 50 rt   \$3.31   \$3.277.74     1410   CV   Load stockpiled drain material tost going area, 50 rt   \$3.31   \$3.277.74     1410   CV   Load stockpiled drain material tost going area, 50 rt   \$3.31   \$3.30   \$3.556.99     158   Fertilizer, 8000/blac   \$3.30   \$3.505.99     1640   CV   Purchase clean drain material cover (GCL   \$3.30   \$3.505.99     1640   CV   Pileo and compact 24* soil cover in 5-inch lifts   \$3.38   \$3.20   \$3.579.94     1640   CV   Pileo and compact 24* soil cover in 5-inch lifts   \$3.38   \$3.20   \$3.505.99     1640   CV   Pileo and compact 24* soil cover in 5-inch lifts   \$3.38   \$3.20   \$3.505.99     1640   CV   Pileo and compact 24* soil cover in 5-inch lifts   \$3.38   \$3.20   \$3.505.99     1640   CV   Pileo and compact 24* soil cover in 5-inch lifts   \$3.38   \$3.20   \$3.505.99     1640   CV   Pileo and compact 24* soil cover in 5-inch lifts   \$3.38   \$3.20   \$3.505.99     1640   CV   Pileo and compact 24* soil cover in 5-inch lifts   \$3.38   \$3.20   \$3.505.99     1640   CV   Pileo and compact 24* soil cover in 5-inch lifts   \$3.38   \$3.605.99     1640   CV   Pileo and compact 24* soil cover in 6-inch lifts   \$3.38   \$3.605.99     1640   CV   Pileo and compact 24* soil cover in 6-inch lifts   \$3.38   \$3.605.99     1640   CV   Pileo and compact 24* soil cover in 6-inch lifts   \$3.31   \$4.2711.42     1640   CV   Pileo and compact 24* soil cover in 6-inch lifts   \$3.31   \$3.574.99     1640   CV   Pileo and compact 24* soil cover in 6-inch lifts   \$3.31   \$3.574.			Repository Construction - Option 1 Engineered Cover:			
1290   Cy	450	су	Excavate and stockpile topsoil, 300hp dozer, 150ft push	\$2.28	\$1,028.05	Soil for repository cap and to cover mine waste areas
1290	1290	су	Purchase topsoil from off-site source	\$23.18	\$29,897.99	Additional soil needed, import from local source <50miles
1290	1290	су	Haul topsoil to staging area, 50 rt	\$33.11	\$42,711.42	
B20	1290		Load stockpiled soil into truck, 2.25cy FE loader	\$1.28	\$1,651.51	
1   1   1   1   1   1   1   1   1   1	1290	cy	Haul stockpiled soil, 12cy dump, 3mi r.t.	\$5.34	\$6,890.78	
Assumes 20% extra for periphery	820		Place and compact screened fines from waste material	\$5.08	\$4,162.98	
410	2450		Install GCL	\$1.69	\$4,137.05	Assumes 20% extra for periphery
Haul drain material to tstaging area, 50 rt   S33,11   S13,574.95			Purchase clean drain material from off-site source	\$8.72		
410	410		Haul drain material to staging area, 50 rt	\$33.11		
Haul stockpiled drain material, 12cy dump, 3mf r.t.	410		Load stockpiled drain material into truck, 2.25cv FE loader	\$1.28	\$524.90	
410   cy   Place 6 in layer of drain material over GCL   \$3.80   \$1,556.59     2450   sy   Install filter fabric over drain material   \$1.38   \$3,379.94     33.80   \$1,556.59     34.10.96   Sec. 26.38     22 msf   Fertilizer, 800/lb/ac   \$18.63   \$410.96     22 msf   Fertilizer, 800/lb/ac   \$18.63   \$410.96     23 msf   Fertilizer, 800/lb/ac   \$18.63   \$410.96     24 msf   Seeding, slope mix, 6lb/MSF, push spreader   \$91.05   \$2,008.56     25 msf   Seeding, slope mix, 6lb/MSF, push spreader   \$91.05   \$2,008.56     26 msf   Seeding, widtflowers, 0.6lb/MSF, push spreader   \$74.50   \$1,643.37     27 msf   Seeding, widtflowers, 0.6lb/MSF, push spreader   \$74.50   \$1,643.37     28 msf   Place wood slash back over cover   \$763.73   \$386.77     8 msf   Repository Construction - Option 1 Engineered Cover Subtotal =   \$78.673.73   \$386.77     8 msf   Repository Construction - Option 2 Earthen Clay Cover:   \$763.73   \$336.77     8 msf   Seeding, widtflowers, 0.6lb/MSF, push spreader   \$78.50   \$1.26,658.55     8 msf   Place wood slash back over cover   \$763.73   \$386.77     8 msf   Repository Construction - Option 1 Engineered Cover Subtotal =   \$74.71.72     9 msf   Place wood slash back over cover   \$33.11   \$42,711.42     1290						
1840   Sy	410					
Fertilizer, 800/bl/ac   Fertilizer, 800/bl/ac   S18.63   S42.938   S22.08.56   Seeding, slope mix, 6lb/MSF, push spreader   S91.05   S2,008.56   S2   msf   Seeding, slope mix, 6lb/MSF, push spreader   S91.05   S2,008.56   S1,643.37   S2,008.56   S2   msf   Seeding, slope mix, 6lb/MSF, push spreader   S74.50   S1,643.37   S2,008.56   S1,643.37   S2,008.56   S1,643.37   S2,008.56   S1,643.37   S2,008.56   S1,643.37   S2,008.56   S1,643.37   S2,008.56   S2,207.31   S1,117.82   S2,008.56   S1,643.37   S2,008.56   S1,643.37   S2,008.56   S1,043.37   S2,008.56   S1,043.37   S2,008.56   S1,043.37   S2,008.57   S2,008.56   S1,043.37   S2,008.57   S2,008.56   S1,043.37   S2,008.57   S2,00	2450		Install filter fabric over drain material	\$1.38	\$3,379.94	Assumes 20% extra to blend
Seeding   Signature   Signat						
22 msf   Seeding, slope mix, 6lb/MSF, push spreader   \$91.05   \$2,008.56     22 msf   Seeding, wildflowers, 0.6lb/MSF, push spreader   \$74.50   \$1,643.37     3.1,117.82     4.1,117.82     4.5,117.82						
Seeding, wildflowers, 0.6lb/MSF, push spreader						
1.11						
Place wood slash back over cover Repository Construction - Option 1 Engineered Cover Subtotal =   \$763.73   \$386.77   \$126,658.55						
Repository Construction - Option 1 Engineered Cover Subtotal =   \$126,658.55						
450 cy Excavate and stockpile topsoil, 300hp dozer, 150ft push 1290 cy Purchase topsoil from off-site source 1290 cy Haul topsoil to staging area, 50 rt 1290 cy Load stockpiled soil into truck, 2.25cy FE loader 1290 cy Haul stockpiled soil, 12cy dump, 3mi r.t. 1290 cy Haul stockpiled soil, 12cy dump, 3mi r.t. 1290 cy Haul stockpiled soil, 12cy dump, 3mi r.t. 1290 cy Haul stockpiled soil, 12cy dump, 3mi r.t. 1290 cy Haul stockpiled soil, 12cy dump, 3mi r.t. 1290 cy Haul stockpiled soil, 12cy dump, 3mi r.t. 1290 cy Haul stockpiled soil, 12cy dump, 3mi r.t. 1290 cy Haul stockpiled from material from off-site source 1290 sy Install 12 in clay liner 1290 cy Load stockpiled drain material into truck, 2.25cy FE loader 1290 cy Load stockpiled drain material into truck, 2.25cy FE loader 1290 cy Haul stockpiled drain material, 12cy dump, 3mi r.t. 1290 cy Haul stockpiled drain material, 12cy dump, 3mi r.t. 1290 cy Haul stockpiled drain material over clay 1290 cy Place 6 in layer of drain material 1290 cy Place and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace Si Load stockpiled coil into truck, 2.25cy FE loader 1290 cy B						
450 cy Excavate and stockpile topsoil, 300hp dozer, 150ft push 1290 cy Purchase topsoil from off-site source 1290 cy Haul topsoil to staging area, 50 rt 1290 cy Load stockpiled soil into truck, 2.25cy FE loader 1290 cy Haul stockpiled soil, 12cy dump, 3mi r.t. 1290 cy Haul stockpiled soil, 12cy dump, 3mi r.t. 1290 cy Haul stockpiled soil, 12cy dump, 3mi r.t. 1290 cy Haul stockpiled soil, 12cy dump, 3mi r.t. 1290 cy Haul stockpiled soil, 12cy dump, 3mi r.t. 1290 cy Haul stockpiled soil, 12cy dump, 3mi r.t. 1290 cy Haul stockpiled soil, 12cy dump, 3mi r.t. 1290 cy Haul stockpiled from material from off-site source 1290 sy Install 12 in clay liner 1290 cy Load stockpiled drain material into truck, 2.25cy FE loader 1290 cy Load stockpiled drain material into truck, 2.25cy FE loader 1290 cy Haul stockpiled drain material, 12cy dump, 3mi r.t. 1290 cy Haul stockpiled drain material, 12cy dump, 3mi r.t. 1290 cy Haul stockpiled drain material over clay 1290 cy Place 6 in layer of drain material 1290 cy Place and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace and compact 24" soil cover in 8-inch lifts 1290 cy Blace Si Load stockpiled coil into truck, 2.25cy FE loader 1290 cy B						
1290       cy       Purchase topsoil from off-site source       \$33.11       \$42,711.42         1290       cy       Haul topsoil to staging area, 50 rt       \$33.11       \$42,711.42         1290       cy       Load stockpiled soil into truck, 2.25cy FE loader       \$1.28       \$1,651.51         1290       cy       Haul stockpiled soil, 12cy dump, 3mi r.t.       \$5.08       \$6,549.08         820       sy       Install 12 in clay liner       \$18.61       \$15,258.24       Assumes 20% extra for periphery         410       cy       Purchase clean drain material from off-site source       \$8.72       \$3,574.74         410       cy       Haul drain material to staging area, 50 rt       \$33.11       \$13,574.95         410       cy       Load stockpiled drain material into truck, 2.25cy FE loader       \$1.28       \$524.90         410       cy       Haul stockpiled drain material, 12cy dump, 3mi r.t.       \$5.34       \$2,190.09         410       cy       Place 6 in layer of drain material over clay       \$3.80       \$1,556.59         820       sy       Install filter fabric over drain material       \$1.38       \$1,131.25         820       Place and compact 24" soil cover in 8-inch lifts       \$3.80       \$6,226.38         82       Fertilizer, 800/lb/ac	450	0.7		മവ വര	¢1 020 0F	Sail for repository can and to cover mine weets areas
1290       cy       Haul topsoil to staging area, 50 rt       \$33.11       \$42,711.42         1290       cy       Load stockpiled soil into truck, 2.25cy FE loader       \$1.28       \$1,651.51         1290       cy       Haul stockpiled soil, 12cy dump, 3mi r.t.       \$5.08       \$6,549.08         820       sy       Install 12 in clay liner       \$18.61       \$15,258.24       Assumes 20% extra for periphery         410       cy       Purchase clean drain material from off-site source       \$8.72       \$3,574.74         410       cy       Haul drain material to staging area, 50 rt       \$33.11       \$13,574.95         410       cy       Load stockpiled drain material into truck, 2.25cy FE loader       \$1.28       \$524.90         410       cy       Haul stockpiled drain material over clay       \$3.80       \$1,556.59         410       cy       Place 6 in layer of drain material over clay       \$3.80       \$1,556.59         820       sy       Install filter fabric over drain material       \$1.38       \$1,131.25         Assumes 20% extra to blend           1640       cy       Place and compact 24" soil cover in 8-inch lifts       \$3.80       \$6,226.38         22       msf       Fertilizer, 800/lb/ac       \$18.63       \$410.96 <td></td> <td></td> <td></td> <td></td> <td></td> <td>Soil for repository cap and to cover mine waste areas</td>						Soil for repository cap and to cover mine waste areas
1290       cy       Load stockpiled soil into truck, 2.25cy FE loader       \$1.28       \$1,651.51         1290       cy       Haul stockpiled soil, 12cy dump, 3mi r.t.       \$5.08       \$6,549.08         820       sy       Install 12 in clay liner       \$18.61       \$15,258.24       Assumes 20% extra for periphery         410       cy       Purchase clean drain material from off-site source       \$8.72       \$3.574.74         410       cy       Haul drain material to staging area, 50 rt       \$33.11       \$13,574.95         410       cy       Load stockpiled drain material into truck, 2.25cy FE loader       \$1.28       \$524.90         410       cy       Haul stockpiled drain material, 12cy dump, 3mi r.t.       \$5.34       \$2,190.09         410       cy       Place 6 in layer of drain material over clay       \$3.80       \$1,556.59         820       sy       Install filter fabric over drain material       \$1.38       \$1,131.25       Assumes 20% extra to blend         1640       cy       Place and compact 24" soil cover in 8-inch lifts       \$3.80       \$6,226.38         22       msf       Fertilizer, 800/lb/ac       \$18.63       \$410.96			·			
1290     cy     Haul stockpiled soil, 12cy dump, 3mi r.t.     \$5.08     \$6,549.08       820     sy     Install 12 in clay liner     \$18.61     \$15,258.24     Assumes 20% extra for periphery       410     cy     Purchase clean drain material from off-site source     \$8.72     \$3,574.74       410     cy     Haul drain material to staging area, 50 rt     \$33.11     \$13,574.95       410     cy     Load stockpiled drain material into truck, 2.25cy FE loader     \$1.28     \$524.90       410     cy     Haul stockpiled drain material, 12cy dump, 3mi r.t.     \$5.34     \$2,190.09       410     cy     Place 6 in layer of drain material over clay     \$3.80     \$1,556.59       820     sy     Install filter fabric over drain material     \$1.38     \$1,131.25       1640     cy     Place and compact 24" soil cover in 8-inch lifts     \$3.80     \$6,226.38       22     msf     Fertilizer, 800/lb/ac     \$18.63     \$410.96						
820 sy Install 12 in clay liner \$18.61 \$15,258.24 Assumes 20% extra for periphery  410 cy Purchase clean drain material from off-site source \$8.72 \$3,574.74  410 cy Haul drain material to staging area, 50 rt \$33.11 \$13,574.95  410 cy Load stockpiled drain material into truck, 2.25cy FE loader \$1.28 \$524.90  410 cy Haul stockpiled drain material, 12cy dump, 3mi r.t. \$5.34 \$2,190.09  410 cy Place 6 in layer of drain material over clay \$3.80 \$1,556.59  820 sy Install filter fabric over drain material  410 cy Place and compact 24" soil cover in 8-inch lifts \$3.80 \$6,226.38  420 msf Fertilizer, 800/lb/ac \$18.63 \$410.96						
410 cy Haul drain material from off-site source \$8.72 \$3,574.74 410 cy Haul drain material to staging area, 50 rt \$33.11 \$13,574.95 410 cy Load stockpiled drain material into truck, 2.25cy FE loader \$1.28 \$524.90 410 cy Haul stockpiled drain material, 12cy dump, 3mi r.t. \$5.34 \$2,190.09 410 cy Place 6 in layer of drain material over clay \$3.80 \$1,556.59 820 sy Install filter fabric over drain material 1640 cy Place and compact 24* soil cover in 8-inch lifts \$3.80 \$6,226.38 22 msf Fertilizer, 800/lb/ac \$18.63 \$410.96		-				Account OOM and the form with a man
410 cy Haul drain material to staging area, 50 rt \$33.11 \$13,574.95 410 cy Load stockpiled drain material into truck, 2.25cy FE loader \$1.28 \$524.90 410 cy Haul stockpiled drain material, 12cy dump, 3mi r.t. \$5.34 \$2,190.09 410 cy Place 6 in layer of drain material over clay \$3.80 \$1,556.59 820 sy Install filter fabric over drain material 1640 cy Place and compact 24" soil cover in 8-inch lifts \$3.80 \$6,226.38 22 msf Fertilizer, 800/lb/ac \$18.63 \$410.96						Assumes 20% extra for periphery
410     cy     Load stockpiled drain material into truck, 2.25cy FE loader     \$1.28     \$524.90       410     cy     Haul stockpiled drain material, 12cy dump, 3mi r.t.     \$5.34     \$2,190.09       410     cy     Place 6 in layer of drain material over clay     \$3.80     \$1,556.59       820     sy     Install filter fabric over drain material     \$1.38     \$1,131.25     Assumes 20% extra to blend       1640     cy     Place and compact 24" soil cover in 8-inch lifts     \$3.80     \$6,226.38       22     msf     Fertilizer, 800/lb/ac     \$18.63     \$410.96						
410 cy Haul stockpiled drain material, 12cy dump, 3mi r.t. \$5.34 \$2,190.09 410 cy Place 6 in layer of drain material over clay \$3.80 \$1,556.59 820 sy Install filter fabric over drain material 1640 cy Place and compact 24" soil cover in 8-inch lifts \$3.80 \$6,226.38 22 msf Fertilizer, 800/lb/ac \$18.63 \$410.96						
410 cy Place 6 in layer of drain material over clay \$3.80 \$1,556.59  820 sy Install filter fabric over drain material  1640 cy Place and compact 24" soil cover in 8-inch lifts \$3.80 \$6,226.38  22 msf Fertilizer, 800/lb/ac \$18.63 \$410.96			· · · · · · · · · · · · · · · · · · ·			
820 sy Install filter fabric over drain material \$1.38 \$1,131.25 Assumes 20% extra to blend 1640 cy Place and compact 24" soil cover in 8-inch lifts \$3.80 \$6,226.38 22 msf Fertilizer, 800/lb/ac \$18.63 \$410.96						
1640       cy       Place and compact 24" soil cover in 8-inch lifts       \$3.80       \$6,226.38         22       msf       Fertilizer, 800/lb/ac       \$18.63       \$410.96		-				
22 msf Fertilizer, 800/lb/ac \$18.63 \$410.96		-				Assumes 20% extra to blend
			·			
22 mst Seeding, slope mix, 6lb/MSF, push spreader \$91.05 \$2,008.56						
	22	msf	Seeding, slope mix, 6lb/MSF, push spreader	\$91.05	\$2,008.56	

Qty	Unit	Description	Unit Cost	Cost	Comment
22	msf	Seeding, wildflowers, 0.6lb/MSF, push spreader	\$74.50	\$1,643.37	
0.5	ac	Hydromulching, wood cellulose	\$2,207.31	\$1,117.82	
0.5	ac	Place wood slash back over cover	\$763.73	\$386.77	
		Repository Construction - Option 2 Earthen Clay Cover Subtotal =		\$144,256.09	
		Mine Waste Area Reclamation (includes mill foundation footprint)			
2	су	Load stockpiled soil into truck, 2.25cy FE loader	\$1.28	\$1.95	Material stockpiled at millsite, only need to haul for WR-2
2	су	Haul stockpiled soil, 12cy dump, 1mi r.t. (west zone WR-2)	\$4.33	\$6.60	
100	су	Push stockiled soil over WR-1 and Mill Site	\$4.66	\$464.73	Assumes 25% of area covered by repository
101	су	Place 6 to 12" soil cover over excavated waste areas, 1cy backhoe	\$2.45	\$248.21	
1	Is	Reclaim seep areas	\$4,000.00	\$4,000.00	Mimic natural channel to Quartz Creek
15	msf	Fertilizer, 800/lb/ac	\$18.63	\$279.45	Assumes 25% of area covered by repository
15	msf	Seeding, slope mix, 6lb/MSF, push spreader	\$91.05	\$1,365.77	
15	msf	Seeding, wildflowers, 0.6lb/MSF, push spreader	\$74.50	\$1,117.45	
0.3	ac	Hydromulching, wood cellulose	\$2,207.31	\$662.19	
1	ls	Plant tree seedlings in main area	\$1,000.00	\$1,000.00	Estimate
0.3	ac	Place wood slash back over areas	\$763.73	\$229.12	
		Mine Waste Area Reclamation Subtotal =		\$9,375.47	
		Access Road Reclamation			
1	day	Ripped compacted surface	\$1,184.22	\$1,184.22	
10	day	Grade to blend with surrounding topography	\$1,184.22	\$11,842.21	
1	ls	Disassemble temporary bridge	\$10,000.00	\$10,000.00	
40	msf	Fertilizer, 800/lb/ac	\$18.63	\$745.19	
40	msf	Seeding, slope mix, 6lb/MSF, push spreader	\$91.05	\$3,642.06	
40	msf	Seeding, wildflowers, 0.6lb/MSF, push spreader	\$74.50	\$2,979.87	
1	ac	Hydromulching, wood cellulose	\$2,207.31	\$2,207.31	
1	ac	Place wood slash back over areas	\$763.73	\$763.73	
		Access Road Reclamation Subtotal =	_	\$33,364.58	
		Miscellaneous			
400	lf	Install riprap diversion channel above repository	\$20.93	\$8,370.11	
900	lf	Install temporary fence around repository	\$2.95	\$2,652.08	
1	ls	Staging area prep	\$500.00	\$500.00	
1	ls	Mobilization	\$30,000.00	\$30,000.00	
1	ls	Temporary erosion control BMPs	\$5,000.00	\$5,000.00	
		Miscellaneous Subtotal =	_	\$46,522.20	
		Post-removal Monitoring (3 year total)			Assumes 3 years of monitoring, 6 events, 3 aquatic sampling locations, limited analysis,
1	ls	Biannual monitoring of aquatic habitat, 6 events total, annual reports	\$49,472.00	\$49,472.00	no baseline or pre-removal survey or sampling
		Post-removal Monitoring Subtotal =		\$49,472.00	• • •

Qty	Unit	Description	Unit Cost	Cost	Comment
SUMMAR	RY				
		OPTION 1 - & ENGINEERED COVER:			
		Access Road Improvement Subtotal =		\$5,000	
		Bat Gate Installation Subtotal =		\$5,500	
		Debris Removal Subtotal =		\$5,556	
		Access Road Construction Subtotal =		\$107,032	
		French Drain Construction Subtotal =		\$52,803	
		Mine Waste Excavation and Disposal Subtotal =		\$40,481	
		Repository Construction - Option 1 Engineered Cover Subtotal =		\$126,659	
		Mine Waste Area Reclamation Subtotal =		\$9,375	
		Access Road Reclamation Subtotal =		\$33,365	
		Miscellaneous Subtotal =		\$46,522	
		Removal Action Total =		\$432,293	
		Design =		\$64,844	Assumed 15% of removal action total
		Removal Action Oversight =		\$60,000	Assumed 30-day construction period
		Post-removal Monitoring Subtotal =	_	\$49,472	
		Subtotal =		\$606,609	
		Contingency 20%	_	\$121,322	
		OPTION 1 - ENGINEERED COVER	R TOTAL =	\$727,931	
		ORTION A FARTURN OF AV COVER			
		OPTION 2 - EARTHEN CLAY COVER:		<b>#F 000</b>	
		Access Road Improvement Subtotal =		\$5,000	
		Bat Gate Installation Subtotal =  Debris Removal Subtotal =		\$5,500 \$5,500	
		Access Road Construction Subtotal =		\$5,556 \$107,032	
		French Drain Construction Subtotal =		\$52,803	
		Mine Waste Excavation and Disposal Subtotal =		\$40,481	
		Repository Construction - Option 2 Earthen Clay Cover Subtotal =		\$144.256	
		Mine Waste Area Reclamation Subtotal =		\$9,375	
		Access Road Reclamation Subtotal =		\$33,365	
		Miscellaneous Subtotal =		\$46,522	
		Removal Action Total =	_	\$449.891	
		Design =		\$67,484	Assumed 15% of removal action total
		Removal Action Oversight =		\$60,000	Assumed 30-day construction period
		Post-removal Monitoring Subtotal =		\$49,472	, localitou de duly delibridudelle period
		Subtotal =		\$626,846	
		Contingency 20%		\$125,369	
		•			
		OPTION 2 - EARTHEN CLAY COVER	CIUIAL =	\$752,215	

Qty	Unit	Description	Unit Cost	Cost	Comment			
RAINY M	RAINY MINE - RECOMMENDED ALTERNATIVE: EXCAVATION AND ON-SITE DISPOSAL IN RIDGE REPOSITORY WITH ENGINEERED COVER							
ACCESS R	OAD IMP	ROVEMENT						
1	ls	Access Road (FR 5640) Improvement	\$5,000.00	\$5,000.00	Estimate based on minor improvements to FR 5640			
		Access Road Improvement Subtotal =		\$5,000.00				
PHYSICAL	HAZARD	OS MITIGATION:						
		Bat Gate Installation	<b>05 500 00</b>	<b>#F F00 00</b>				
1	ea	Bat gate, installed at open adit	\$5,500.00	\$5,500.00				
		Bat Gate Installation Subtotal =		\$5,500.00				
		Debris Removal						
1	Is	Collect miscellaneous debris and litter including mobilization	\$5,000.00	\$5,000.00	Based on crew of 6 employees with no overnight stay			
20	су	Load miscellaneous debris and litter, 1cy backhoe	\$3.32	\$66.44	Assumes equivalent to 1 truckload			
6	hr	Haul mill debris to sanitary landfull, 12cy dump, 120mi r.t.	\$81.62	\$489.69	Assumes 3 hours per truckload			
		Debris Removal Subtotal =		\$5,556.13				
MINE WAS	TE REMO							
465		Access Road Construction	040.0=	04 000 ==				
100	ea	Clear trees, brush and downfall	\$19.27	\$1,926.98	Rough approximation			
2000	су	Cut and widen road	\$6.68	\$13,354.22	Assumes riprable rock and soil, push with dozer, no hauling			
1	ls	Install temporary bridge, 100-ft span	\$70,000.00	\$70,000.00	Bailey Bridges, Alabama, verbal estimate			
800	lf ev	Benching Compact and grade	\$1.43 \$4.85	\$1,147.80 \$1,114.36				
230 300	sy cy	Haul and spread 3in layer of gravel road base	\$4.85 \$64.96	\$1,114.36 \$19,488.33	Inc off-site material cost and delivery, handling, and spreading			
300	Су	Access Road Construction Subtotal =	Ψ04.30	\$107,031.68	ine on-site material cost and delivery, nanding, and spreading			
		Access Road Constituction Subtotal -		φ107,031.00				
		Mine Waste Excavation and Disposal						
0.4	ac	Clear trees/brush from waste rock piles	\$1,018.81	\$420.99	Rough approximation			
2000	су	Excavate waste rock from main area (WR-1); 1cy backhoe	\$3.68	\$7,350.34	Assumes no haulage			
25	sy	Demolish concrete foundation	\$182.60	\$4,564.99	Assumes 7 to 24inch reinforced concrete			
25	су	Excavate contaminated soil/concrete from around mill foundation; 1cy backhoe	\$3.68	\$91.88				
100	су	Excavate contaminated sediment from two seeps; 1cy backhoe	\$3.68	\$367.52				
150	су	Backfill open shaft	\$5.51	\$826.91				
25	су	Excavate waste rock from west zone (WR-2); 1cy backhoe	\$3.68	\$91.88				
2000	су	Transport waste rock to repository,12cy dump, 2 mi rt	\$4.83	\$9,668.01				
16	hr	Screen waste material and stockpile fines for repository cover	\$389.40	\$6,230.44	On-site screening plant, 125 ton/hr			
2000	су	Compact waste material	\$1.16	\$2,317.67	Spread and compact, sheepsfoot, 8-inch lifts			
3	wk	XRF rental	\$2,530.00	\$7,590.00	Ashtead Technology Rentals +10%			
6	ea	Confirmation samples (selected metals)	\$120.00	\$720.00	4 from main area and 2 from west zone; SVL			
		Mine Waste Excavation and Disposal Subtotal =		\$40,240.63				

Qty	Unit	Description	Unit Cost	Cost	Comment
	-	Repository Cover Construction - Engineered Cover:			
0.3	ac	Clear and grub repository footprint	\$7,057.87	\$2,117.36	
2760	су	Excavate and stockpile topsoil, 300hp dozer, 150ft push	\$2.28	\$6,305.40	
500	су	Compact bottom of repository, 6" lift, sheepsfoot	\$1.16	\$579.42	
500	су	Place and compact screened fines from waste material	\$5.08	\$2,538.40	
1500	sy	Install GCL	\$1.69	\$2,532.89	Assumes 20% extra for periphery
250	су	Purchase clean drain material from off-site source	\$8.72	\$2,179.72	
250	су	Haul drain material to staging area, 100 mi	\$33.11	\$8,277.41	
250	су	Load stockpiled drain material into truck, 2.25cy FE loader	\$1.28	\$320.06	
250	су	Haul stockpiled drain material, 12cy dump, 1mi r.t.	\$4.33	\$1,081.58	
250	су	Place 6 in layer of drain material over GCL	\$3.80	\$949.14	
1500	sy	Install filter fabric over drain material	\$1.38	\$2,069.35	Assumes 20% extra to blend
1000	су	Place and compact 24" soil cover in 8-inch lifts	\$3.80	\$3,796.57	
14	msf	Fertilizer, 800/lb/ac	\$18.63	\$252.71	
14	msf	Seeding, slope mix, 6lb/MSF, push spreader	\$91.05	\$1,235.10	
14	msf	Seeding, wildflowers, 0.6lb/MSF, push spreader	\$74.50	\$1,010.53	
0.3	ac	Hydromulching, wood cellulose	\$2,207.31	\$687.37	
0.3	ac	Place wood slash back over cover	\$763.73	\$237.83	
		Repository Cover Construction - Engineered Cover Subtotal =		\$27,168.65	
		Mine Waste Area Reclamation			
130	су	Load stockpiled soil into truck, 2.25cy FE loader	\$1.28	\$166.43	Growth medium stockpiled at repository
130	cy	Haul stockpiled soil, 12cy dump, 3mi r.t.	\$5.34	\$694.42	,
130	cy	Place 6 to 12" soil cover over excavated waste areas, FE loader	\$4.90	\$637.03	
1	ls	Reclaim seep areas	\$4,000.00	\$4,000.00	Mimic natural channel to Quartz Creek
20	msf	Fertilizer, 800/lb/ac	\$18.63	\$372.59	
20	msf	Seeding, slope mix, 6lb/MSF, push spreader	\$91.05	\$1,821.03	
20	msf	Seeding, wildflowers, 0.6lb/MSF, push spreader	\$74.50	\$1,489.93	
0.4	ac	Hydromulching, wood cellulose	\$2,207.31	\$882.92	
1	LS	Plant tree seedlings in main area	\$1,000.00	\$1,000.00	Estimate
0.4	ac	Place wood slash back over areas	\$763.73	\$305.49	
		Mine Waste Area Reclamation Subtotal =		\$11,369.85	
		Access Road Reclamation			
1	day	Ripped compacted surface	\$1,184.22	\$1,184.22	
10	day	Grade to blend with surrounding topography	\$1,184.22	\$11,842.21	
40	msf	Fertilizer, 800/lb/ac	\$18.63	\$745.19	
1	ls	Disassemble temporary bridge	\$10,000.00	\$10,000.00	
40	msf	Seeding, slope mix, 6lb/MSF, push spreader	\$91.05	\$3,642.06	
40	msf	Seeding, wildflowers, 0.6lb/MSF, push spreader	\$74.50	\$2,979.87	
1	ac	Hydromulching, wood cellulose	\$2,207.31	\$2,207.31	
1	ac	Place wood slash back over areas	\$763.73	\$763.73	
		Access Road Reclamation Subtotal =	_	\$33,364.58	
000	16	Miscellaneous	<b>#7.00</b>	04 504 07	
200	lf ''	Install earthen diversion channel above repository	\$7.66	\$1,531.87	
600	lf '-	Install temporary fence around repository	\$2.95	\$1,768.05	
1	ls	Staging area prep	\$500.00	\$500.00	
1	ls	Mobilization Temperature region control RMPs	\$30,000.00	\$30,000.00	
1	ls	Temporary erosion control BMPs	\$4,000.00	\$4,000.00 <b>\$37,799.93</b>	
		Miscellaneous Subtotal =		\$31,188.93	
		Post-removal Monitoring (3 year total)			Assumes 3 years of monitoring, 6 events, 3 aquatic sampling locations, limited analysis
1	ls	Biannual monitoring of aquatic habitat, 6 events total, annual reports	\$49,472.00	\$49,472.00	no baseline or pre-removal survey or sampling
		Post-removal Monitoring Subtotal =	· · · · · · -	\$49,472.00	. , , ,
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Qty	Unit	<b>Description</b> U	nit Cost	Cost	Comment	
SUMMAR	(Y					
		Access Road Improvement Subtotal =		\$5,000		
		Bat Gate Installation Subtotal =		\$5,500		
		Debris Removal Subtotal =		\$5,556		
		Access Road Construction Subtotal =		\$107,032		
		Mine Waste Excavation and Disposal Subtotal =		\$40,241		
		Repository Cover Construction - Engineered Cover Subtotal =		\$27,169		
		Mine Waste Area Reclamation Subtotal =		\$11,370		
		Access Road Reclamation Subtotal =		\$33,365		
		Miscellaneous Subtotal =		\$37,800		
		Removal Action Total =		\$273,031		
		Design =		\$40,955	Assumed 15% of removal action total	
		Removal Action Oversight =		\$60,000	Assumed 30-day construction period	
		Post-removal Monitoring Subtotal =		\$49,472	·	
		Subtotal =	_	\$423,458		
		Contingency 20%	_	\$84,692		
		RECOMMENDED ALTERNATIVE	TOTAL =	\$508,150		

# Estimated Removal Action Cost Summary Rainy Mine EE/CA

				Alternative 3		Recommended
TT 4 CY 7			Alternative 2	Cost		Alternative
TASK	Description		Cost	Alt 3A	Alt 3B	Cost
Access Road						
Improvement			\$5,000	\$5,000	\$5,000	\$5,000
		subtotal =	\$5,000	\$5,000		\$5,000
Physical Hazards	Bat Gate Installation		\$5,500	\$5,500		\$5,500
Mitigation	Debris Removal		\$5,556	\$5,556		\$5,556
		subtotal =	\$11,056	\$11,056		\$11,056
	Access Road Construction		\$107,032	\$107,032	\$107,032	\$107,032
	Mine Waste Excavation and Disposal		\$195,267	\$40,241	\$40,481	\$40,241
Mine Waste	French Drain Construction				\$52,803	
Removal	Repository Construction <sup>a</sup>			\$27,169	\$126,659	\$27,169
Kemovai	Mine Waste Area Reclamation		\$18,651	\$11,370	\$9,375	\$11,370
	Access Road Reclamation		\$27,075	\$33,365	\$33,365	\$33,365
		subtotal =	\$348,025	\$219,175	\$369,715	\$219,175
	Staging Area Preparation		\$2,000	\$500	\$500	\$500
	Mobilization		\$20,000	\$30,000	\$30,000	\$30,000
Miscellaneous	Temporary Erosion Control BMPs		\$5,000	\$4,000	\$5,000	\$4,000
Miscenaneous	Install Diversion Channel Above Repository			\$1,532	\$8,370	\$1,532
	Install Temporary Fence Around Repository			\$1,768	\$2,652	\$1,768
		subtotal =	\$27,000	\$37,800	\$46,522	\$37,800
		Removal Action Subtotal =	\$391,081	\$273,031	\$432,293	\$273,031
Design and	Design		\$39,108	\$40,955	\$64,844	\$40,955
Oversight	Removal Action Oversight		\$40,000	\$60,000	\$60,000	\$60,000
		subtotal =	\$79,108	\$100,955	\$124,844	\$100,955
	Post-removal Monitoring for 3 years		\$49,472	\$49,472	\$49,472	\$49,472
Monitoring		subtotal =	\$49,472	\$49,472	\$49,472	\$49,472
		SUBTOTAL =	\$519,662	\$423,458	\$606,609	\$423,458
Contingency	20% Contingency		\$103,932	\$84,692	\$121,322	\$84,692
		TOTAL COST =	\$ 623,594	\$ 508,150	\$ 727,931	\$ 508,150

Notes:

<sup>&</sup>lt;sup>a</sup>Cost based on repository cover option 1 - engineered cover; cover option 2 - earthen clay cover would increase cost from \$25,000 to \$31,000 based on options selected